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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/569,556

02/27/2006

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EXAMINER

LEVINE, JOSHUA H

ART UNIT

PAPER NUMBER

3774

NOTIFICATION DATE

DELIVERY MODE

07/09/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/569,556	Applicant(s) OGISO, MAKOTO	
	Examiner JOSHUA LEVINE	Art Unit 3774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6,9-19 and 22-28 is/are pending in the application.
- 4a) Of the above claim(s) 3,4,11-13,15,16,23 and 24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,9,10,14,17-19,22 and 25-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is responsive to the amendment filed on 04/16/2010. As directed by the amendment: claims 1, 12, 17-18 and 23 have been amended, claims 7-8 have been cancelled, and new claims 27-28 have been added. Thus, claims 1-6 and 9-28 are presently pending in this application.

Election/Restrictions

2. Claims 3-4, 11-13, 15-16 and 23-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species A, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 04/16/2010.

3. Applicant's election with traverse of species A claims 3-4 in the reply filed on 04/16/2010 is acknowledged. The traversal is on the ground(s) that the claims 3-4 are drawn to the elected species. This is not found persuasive because these claims have fine communicating pores open to the inner walls rather than the outer surface.

The requirement is still deemed proper and is therefore made FINAL.

Response to Arguments

4. Applicant's arguments, see page 8, filed 04/16/2010, with respect to claims 2 and 18 have been fully considered and are persuasive. The rejections under 35 U.S.C. of claims 2 and 8 have been withdrawn.

5. Applicant's arguments with respect to claims 1, 5, 6, 9, 10, 14, 17, 19, and 22 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

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6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

7. Claims 1, 5-6, 9, 10, 14, 17, 19, 22, and 25-28 are rejected under 35 U.S.C. 103(a) as being obvious over Smestad (4430760) in further view of Trieu et al. (PG Pub no. 20020115742).

8. Regarding claim 1, Smestad disclosed all the elements of the claim including a porous matrix (porous casing, column 1 lines 59) made of a biocompatible material (casing is biocompatible, column 2 lines 59-60) impregnated with fine bone powder (demineralized particulate, column 1 line 57) obtained by pulverizing living bones and/or teeth (bone or dentin particulate, column 1 lines 60-61) except for wherein the fine bone powder comprises sub-micron particles.

Trieu et al. teaches an orthopedic composition that contains sub-micron bioactive powder (not more than 500 nanometers, paragraph 9). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the particles of Trieu et al. for the purpose of increasing the surface area of the particles to provide for advantageous biological and mechanical properties (paragraph 9).

9. Regarding claims 5-6 and 19, Smestad disclosed wherein said biocompatible material is at least one selected from the group consisting of polymers (microporous polymer, column 3 line 9).

10. Regarding claims 9 and 22, Smestad disclosed wherein said fine bone powder has an average diameter of 50 μm or less μm (embodiments have particles sizes down to 40 μm , column 3 lines 25-27).

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11. Regarding claim 10, Smestad disclosed wherein the entire structure is porous (porosity permits permeation **throughout** the implant, column 4 lines 1-3).

12. Regarding claims 14 and 25, Smestad disclosed an artificial bone (used as bone tissue, column 4 lines 24-25) comprising the bone-powder-impregnated, porous structure recited in claim 10.

13. Regarding claim 17, see claim 1 for further explanation. The examiner considers the roughened surface matrix to be roughened via the porous structure disclosed in claim 1.

14. Regarding claim 26, Smestad disclosed an artificial dental root (craniofacial bone, column 4 lines 28-29) comprising the bone- powder-impregnated, surface-roughened structure recited in claim 17. The examiner considers Smestad et al. to disclose a dental root as Smestad et al. teaches a dentin filled implant for use in repairing craniofacial bone.

15. Regarding claims 27-28, Smestad disclosed all the elements of the claim except for autologous bone.

Trieu et al. teaches an orthopedic composition that contains autologous bone (autograft, paragraph 6). It would have been obvious to one of ordinary skill in the art at the time of the rejection to include the autologous bone of Trieu et al. for the purpose of providing an implant that is osteoinductive (paragraph 6).

16. Claims 2 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Smestad (4430760)) in further view of Trieu et al. (PG Pub no. 20020115742) in further view of Smith et al. (PG Pub no. 20040253279).

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17. Regarding claims 2 and 18, Smestad disclosed all the elements of the claim including wherein it has fine communicating pores having an average diameter of 0.005-50 μm (embodiments have particles sizes down to 40 μm , column 3 lines 25-27) in its entire body (porosity permits permeation throughout the implant, column 4 lines 1-3), said fine communicating pores being open on an outer surface of said porous structure (outer membrane is porous, column 3 lines 36-38) except a structure with a density of 1 or more pores per an area of 50 μm x 50 μm .

Smith et al. teach a porous structure (porous bone substitute, paragraph 31) with a density of 1 or more pores per an area of 50 μm x 50 μm (porosity up to 95% with pore sizes in the range of 15-150 micrometers, paragraph 23). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the pore density of Smith et al. for the purpose of encouraging fibro-vascular ingrowth and osteoid formation (paragraph 43).

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA LEVINE whose telephone number is (571)270-5413. The examiner can normally be reached on Monday-Thursday 7:30am-5:00pm ETA.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Isabella can be reached on 571-272-4749. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. L./

Examiner, Art Unit 3774

/Thomas J Sweet/

Primary Examiner, Art Unit 3774